

REMARKS

In the Office Action, claims 1-39 were rejected. By the present Response, claims 22 and 29 are amended. Upon entry of the amendments, claims 1-39 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Rejections Under 35 U.S.C. § 103

The Office Action summarizes claims 1-4, 6-9, 11-14, 16-20 and 22-39 as rejected under 35 U.S.C. §103(a) as being anticipated by Rothenberger et al. (U.S. Patent No. 6,287,108; hereinafter “Rothenberger”) in view of Adams et al. (U.S. Patent No. 6,178,997; hereinafter “Adams”). Rejected claims 1, 11, 22, 29 and 34 are independent and will be discussed in detail below.

By the present response independent claims 22 and 29 are amended. Independent claims 1, 11, 22, 29 and 34 and the claims depending therefrom are believed to be patentable for the reasons summarized below.

Claim 1 recites an enhanced gas range system. The system includes a pressure regulator adapted to regulate a gas flow from a gas feed line and a gas fuel boost pump disposed downstream of the pressure regulator and adapted to increase pressure of the gas flow received from the gas feed line. The system also includes a gas burner disposed to receive the gas flow from the gas fuel boost pump.

Claim 11 recites an enhanced gas range system. The system includes a pressure regulator adapted to regulate gas flow from a gas feed line and a gas fuel boost pump placed downstream of the pressure regulator and adapted to increase a pressure of the gas flow received from the gas feed line. The system also includes a gas burner disposed to receive the gas flow from the gas fuel boost pump and a

transducer disposed upstream of the gas burner and adapted to measure a parameter of gas flow from the gas fuel boost pump pressure at a predetermined location.

Amended Claim 22 recites a method of enhancing performance of a gas burner, having a gas as fuel. The method includes actively increasing pressure of a gas flow through a gas feed line via a gas fuel boost pump disposed downstream of a pressure regulator coupled to a gas feed line and regulating the gas flow of the gas fuel boost pump based upon a user-defined input to regulate a burner heat output to a desired burner output.

Amended claim 29 recites a method of enhancing a gas burner performance. The method includes increasing pressure of a current gas flow through a gas feed line via a gas fuel boost pump disposed downstream of a pressure regulator coupled to a gas feed line and measuring a parameter of gas flow from the gas fuel boost pump at a predetermined location via a transducer. The method also includes regulating the gas flow through the gas fuel boost pump based upon a user-defined input and a signal received from the transducer.

Claim 34 recites a system for enhancing primary air entrainment in a gas burner. The system includes a pressure regulator adapted to regulate a gas flow from a gas feed line and a gas fuel boost pump disposed downstream of the pressure regulator and adapted to increase primary air entrainment of the gas flow received from the gas feed line. The system also includes a gas burner disposed for receiving the gas flow from the gas fuel boost pump.

Applicants thus submit that independent claims 1, 11, 22, 29 and 34 recite, in generally similar language, the gas range system *including gas fuel boost pump disposed downstream of the pressure regulator* and configured to *increase pressure* of a gas flow received from the gas feed line.

The Examiner argued that Rothenberger discloses a method of enhancing burner performance in a gas range system that includes a pressure regulator in the form of actuating device with valve to regulate gas flow through a gas feed line. The Examiner acknowledged that Rothenberger does not disclose the use of gas fuel boost pump. However, the Examiner relied upon Adams to teach a variable speed pump for regulation of fluid flow to a gas burner.

Furthermore, the Examiner argued that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the valve of Adams to incorporate the variable speed pump taught by Rothenberger for the purpose of controlling the amount of fluid distribution. *See, Office Action, page 5.*

Applicants submit that the Examiner apparently intended to refer to Rothenberger for teaching the valve and to Adams for teaching the variable speed pump. However, neither of these references discloses a *gas fuel boost pump disposed downstream of the pressure regulator and configured to increase the pressure of the gas flow from the gas feed line*. In particular, Rothenberger discloses an actuating device for *varying the gas flow* through a gas feed line as a function of the controlled variable supplied by closing or opening the gas valve accordingly. *See, Rothenberger, col. 6, lines 55-63.* Further, Adams teaches a control element such as a valve, or a variable speed drive or a pump.

As can be seen, neither of the references teaches a gas fuel boost pump disposed downstream of the pressure regulator to boost the pressure of the gas flow. Applicants submit that even if the valve of the system disclosed by Rothenberger is replaced with a variable speed pump of Adams the system will not have a pump

disposed downstream of the regulator. Further, such system will not be able to achieve a pressure boost of the gas flow from the gas feed line.

The present invention provides for enhancing performance of a gas burner by increasing primary air entrainment of the gas flow received from the gas feed line. In particular, the primary air entrainment is increased via increasing the pressure of the gas flow by *a pump that is disposed downstream of the pressure regulator*. As discussed below, Rothenberger and Adams, even in combination do not teach such an arrangement.

Following the alternative teachings of Adams (i.e., that some regulators could be replaced with a pump), the modification proposed by the Examiner would effectively *replace* the pressure regulator of Rothenberger with a pump. Applicants first point out that such replacement would result in a system with a pump and no upstream regulator, while both are required by the current claims. Applicants further submit that such pressure regulators are well known and used for pressure control and to maintain a desired, *reduced outlet pressure* in fluid distribution applications and the process industries. *See*, Adams, col. 1, lines 32-40. Therefore, even in combination, Rothenberger and Adams do not teach increase in pressure of the gas flow downstream of the pressure regulator.

Therefore, Applicants submit that independent claims 1, 11, 22, 29 and 34 are allowable over the proposed combination, and respectfully request the Examiner to reconsider rejection of the claim. Claims 2-4, 6-9, 12-14, 16-20, 23-28, 30-33 and 35-39 depend from independent claims 1, 11, 22, 29 and 34, respectively. Applicants respectfully submit that insomuch as independent claims 1, 11, 22, 29 and 34 are allowable, these claims are allowable at least by virtue of their dependence from an allowable base claim.

Claims 5 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Rothenberger in view of Adams as applied to claim 1 and further in view of Smith (U.S. Patent No. 5,795,998).

Applicants submit that these claims depend directly or indirectly from allowable claims 1 and 11, and are therefore considered to be allowable at least by virtue of their dependency from an allowable base claim.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: 1/31/2006

29
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